

RETRIEVAL OF FIRST INSTAR TACHINID
LARVAE FROM PINNED SPECIMENS

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Abstract.—A method by which first instar tachinid larvae can be retrieved from dried pinned material for either slide preparations or scanning electron microscope examination is presented.

Except in such works as Townsend's *Manual of Myiology* (1934-1942), Hennig's *Die Larvenformen der Dipteren* (1952) and Thompson's *Tachinids of Trinidad* (1968, and earlier works), little progress has been made in the utilization of first instar characters of larviporous dipteran species. Examination of first instars offers the taxonomist a new range of morphological characters to be used in species determination. In addition, by making deductions concerning function through morphology, the biologist may gain insight into the host finding methods of the parasitoid involved. Thompson (1968) recognized the utility of first instars and showed significant differences in the cephalo-pharyngeal skeletons, sensoria, and cuticular armature.

The methods herein described are similar to those utilized by Thompson and others but never published (Sabrosky, personal communication) and to date not used in scanning electron microscope preparation.

First instars should normally be obtained from freshly caught adult females; however, this is not possible in most instances. Therefore, the procedure outlined below can be applied to dried, pinned material either singly or to a series of specimens. These procedures have been used not only with sclerotized groups, such as *Euphasiopteryx* Townsend, but also semi-membranous and membranous tachinid genera such as *Archytas* Jaenicke, *Microphthalma* Macquart, and *Hyalomyodes* Townsend (Ravlin, 1975).

1. Carefully remove the female abdomen at the base of the thorax.
2. Place the detached abdomen in 10% KOH for 8-10 h. After this time period the genitalia can be dissected from the abdomen. (Note: Distortion of bristles and sclerites can occur if boiled. In addition, NaOH may be substituted for KOH.)
3. Dissect the genitalia in a 20% solution of glacial acetic acid to neutralize the KOH. The genitalia can then be washed in 70% ETOH and examined.
4. First instars can now be carefully removed from the abdomen while still in the acid solution.

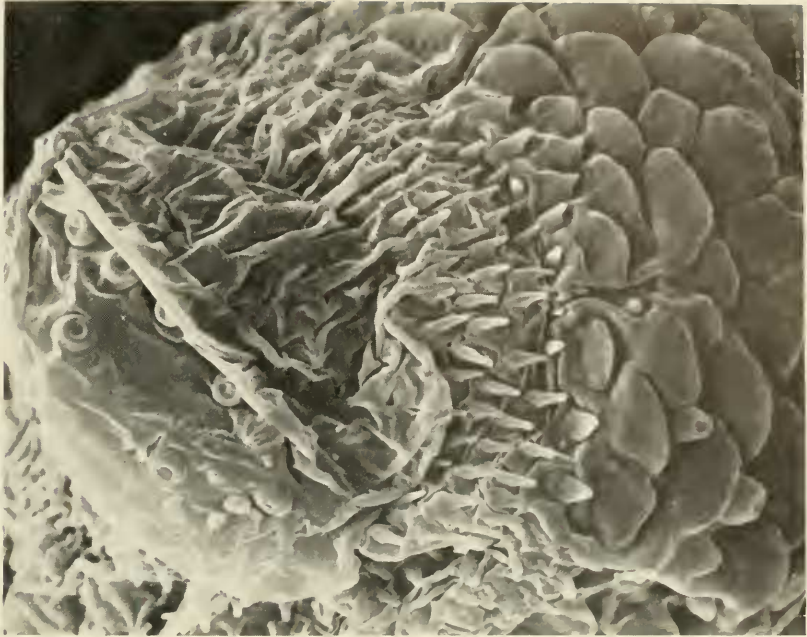


Fig. 1. First instar larva of *Archytas apicifer* (Walker) taken from pinned specimen. Anterdorsal aspect (2,000 \times).

5. Following dissection, the abdomen should be dried and reattached to thorax with glue.
6. Larvae can be pipetted from the acid solution and transferred to 70% ETOH and then to a glass microscope slide for mounting.
7. By placing a few drops of carbo-xytol on the specimens, the remaining water can be removed. Draw off the excess carbo-xytol with a small piece of filter paper and mount directly in balsam.

Scanning electron microscope preparations are easily made by following steps 1-5 and then placing the specimens in a porous container to be run through an alcohol series to 100% ETOH. The specimens are then critical point dried and mounted on an SEM stud to be gold coated and observed (Fig. 1).

Literature Cited

- Hennig, W. 1952. Die larvenformen der Dipteren. Pt. 3. Berlin. 628 pp.
- Ravlin, F. W. 1975. A revision of the genus *Archytas* Jaenicke (Diptera: Tachinidae) for America north of Mexico. Unpublished Master's Thesis. Michigan State University.

Thompson, W. R. 1968. The tachinids of Trinidad. VIII. Phorocerines. Mem. Entomol. Soc. Can. 56:1-207.

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NOTE

NEW SYNONYMY IN EPHYDRIDAE (DIPTERA)

Since publication of the catalogue of North American Diptera (Stone et al., 1965, USDA Agr. Hdbk. 276, 1696 pp.), several new genus-group taxa have been proposed in the family Ephydriidae. We have included those Nearctic taxa we consider valid in a generic key being prepared for the forthcoming revision of Curran's Manual of Diptera. Our purpose here is to dispense with the generic and species synonymy listed below.

Philygria Stenhammar

Notiphila sectio *Philygria* Stenhammar, 1844, K. Vetensk. Akad. Handl. 1843:154. Type-species, *Notiphila flavipes* Fallén, by subsequent designation (Coquillett, 1910, Proc. U.S. Natl. Mus. 37:588).

Cressoniella Saether, 1970, Univ. Colo. Stud. Ser. Biol. 31:107 (preoccupied, Mitchell, 1934, Trans. Amer. Entomol. Soc. 59:307, Hymenoptera). Type-species, *Cressoniella montana* Saether (= *P. debilis* Loew), by monotypy. NEW SYNONYMY.

Philygria debilis Loew

Philygria debilis Loew, 1861, Berlin Entomol. Ztschr. 5:357.

Cressoniella montana Saether, 1970, Univ. Colo. Stud. Ser. Biol. 31:107. Type-loc: Colo., North Boulder Creek, northern branch. Syntypes, 3, Zool. Mus. Univ. Oslo, Norway. NEW SYNONYMY.

Wirth examined the syntypes and found them to be *Philygria debilis* Loew, a species widespread in North America.

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